

=> d his

(FILE 'HOME' ENTERED AT 15:46:46 ON 02 MAR 2005)

FILE 'CAPLUS' ENTERED AT 15:46:55 ON 02 MAR 2005

L1 1 S US5861386/PN
SELECT L1 1 RN
L2 455369 S E1-E10

FILE 'REGISTRY' ENTERED AT 15:47:34 ON 02 MAR 2005

L3 1 S 13408-78-1/RN
SET NOTICE 1 DISPLAY
SET NOTICE LOGIN DISPLAY

FILE 'REGISTRY' ENTERED AT 15:48:01 ON 02 MAR 2005

L4 1 S 143032-85-3/RN
SET NOTICE 1 DISPLAY
SET NOTICE LOGIN DISPLAY

FILE 'REGISTRY' ENTERED AT 15:48:49 ON 02 MAR 2005

L5 1 S 156316-85-7/RN
SET NOTICE 1 DISPLAY
SET NOTICE LOGIN DISPLAY

FILE 'REGISTRY' ENTERED AT 15:50:21 ON 02 MAR 2005

L6 1 S 157893-62-4/RN
SET NOTICE 1 DISPLAY
SET NOTICE LOGIN DISPLAY

FILE 'REGISTRY' ENTERED AT 15:50:58 ON 02 MAR 2005

L7 1 S 36465-90-4/RN
SET NOTICE 1 DISPLAY
SET NOTICE LOGIN DISPLAY

FILE 'REGISTRY' ENTERED AT 15:51:21 ON 02 MAR 2005

L8 1 S 54573-75-0/RN
SET NOTICE 1 DISPLAY
SET NOTICE LOGIN DISPLAY

FILE 'CAPLUS' ENTERED AT 15:52:49 ON 02 MAR 2005

L9 176 S L8 OR L6 OR L4 OR L5
L10 299818 S OSTEOPOROSIS OR BONE OR SKELET? OR HYPERPARATHYROID? OR OSTEO
L11 49 S L9(L)L10
L12 8 S L11 NOT PY>=1992
L13 21883 S HYPERPARATHYROID? OR PARATHYROID
L14 27 S L9(L)L13

FILE 'MEDLINE, EMBASE, BIOSIS' ENTERED AT 16:39:50 ON 02 MAR 2005

L15 3265 S HYPERPARATHYROID?(L) (OSTEOPOROSIS OR BONE) (L) RENAL

FILE 'MEDLINE' ENTERED AT 16:41:05 ON 02 MAR 2005

L16 1206 S L15
L17 369 S L16 NOT PY>=1988

=>

L8 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2005 ACS on STN

RN 54573-75-0 REGISTRY

CN 9,10-Secoergosta-5,7,10(19),22-tetraene-1,3-diol,
(1 α ,3 β ,5Z,7E,22E) - (9CI) (CA INDEX NAME)

OTHER NAMES:

CN 1-Hydroxyergocalciferol

CN 1-Hydroxyvitamin D2

CN 1 α -Hydroxyergocalciferol

CN 1 α -Hydroxyvitamin D2

CN ~~Doxercalciferol~~

CN Hectorol

CN TSA 840

FS STEREOSEARCH

DR 125285-48-5, 87649-67-0

MF C28 H44 O2

LC STN Files: ADISINSIGHT, ADISNEWS, BEILSTEIN*, BIOSIS, BIOTECHNO, CA,
CANCERLIT, CAPLUS, CASREACT, CBNB, CHEMCATS, CIN, DDFU, DIOGENES, DRUGU,
EMBASE, IFICDB, IFIPAT, IFIUDB, IMSDRUGNEWS, IMSPATENTS, IMSRESEARCH,
IPA, MEDLINE, MRCK*, PHAR, PROUSDDR, PS, RTECS*, SYNTHLINE, TOXCENTER,
USAN, USPAT2, USPATFULL

(*File contains numerically searchable property data)

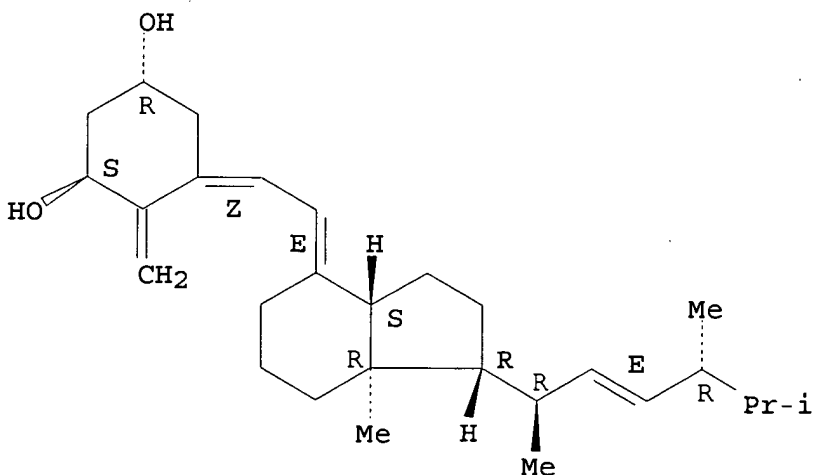
DT.CA Caplus document type: Journal; Patent

RL.P Roles from patents: BIOL (Biological study); FORM (Formation,
nonpreparative); PREP (Preparation); PROC (Process); PRP (Properties);
RACT (Reactant or reagent); USES (Uses)

RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological
study); PREP (Preparation); PROC (Process); PRP (Properties); RACT
(Reactant or reagent); USES (Uses)

Absolute stereochemistry.

Double bond geometry as shown.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

155 REFERENCES IN FILE CA (1907 TO DATE)

156 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L4 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2005 ACS on STN

RN 143032-85-3 REGISTRY

CN 9,10-Secoergosta-5,7,10(19)-triene-1,3-diol, (1 α ,3 β ,5Z,7E)-
(9CI) (CA INDEX NAME)

OTHER NAMES:

CN 1 α -Hydroxyvitamin D4

FS STEREOSEARCH

MF C28 H46 O2

SR CA

LC STN Files: CA, CAPLUS, TOXCENTER, USPAT2, USPATFULL

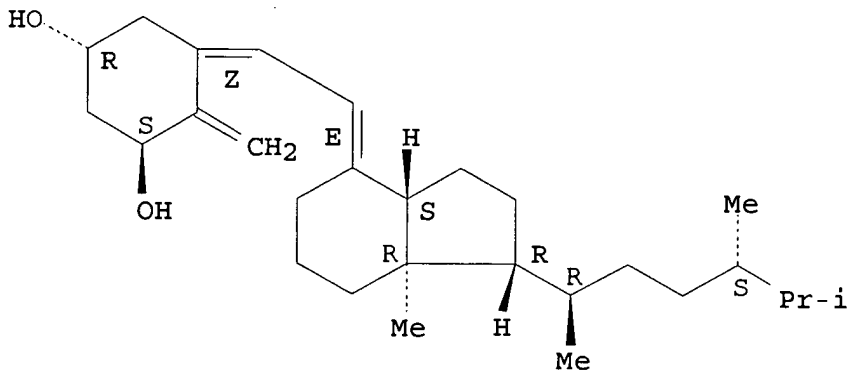
DT.CA Caplus document type: Journal; Patent

RL.P Roles from patents: BIOL (Biological study); FORM (Formation, nonpreparative); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)

RL.NP Roles from non-patents: BIOL (Biological study); PREP (Preparation); USES (Uses)

Absolute stereochemistry.

Double bond geometry as shown.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

25 REFERENCES IN FILE CA (1907 TO DATE)

25 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L5 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2005 ACS on STN
RN 156316-85-7 REGISTRY
CN 9,10-Secoergosta-5,7,10(19),22-tetraene-1,3,24-triol,
(1 α ,3 β ,5Z,7E,22E) - (9CI) (CA INDEX NAME)

OTHER NAMES:

CN 1 α ,24(S)-Dihydroxyvitamin D2

CN 1 α ,24S-Dihydroxyvitamin D2

FS STEREOSEARCH

MF C28 H44 O3

CI COM

SR CA

LC STN Files: CA, CAPLUS, TOXCENTER, USPAT2, USPATFULL

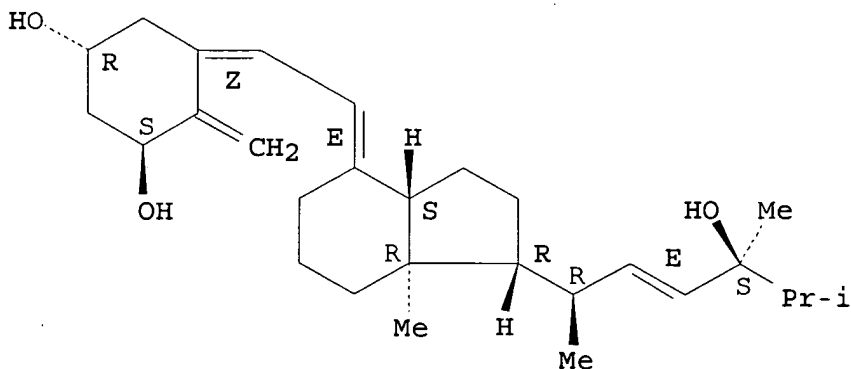
DT.CA Caplus document type: Journal; Patent

RL.P Roles from patents: BIOL (Biological study); FORM (Formation, nonpreparative); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)

RL.NP Roles from non-patents: BIOL (Biological study); FORM (Formation, nonpreparative); PREP (Preparation); PROC (Process); USES (Uses)

Absolute stereochemistry.

Double bond geometry as shown.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

28 REFERENCES IN FILE CA (1907 TO DATE)

28 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> s us5861386/pn

L1 1 US5861386/PN

=> select l1

ENTER ANSWER NUMBER OR RANGE (1-):1

ENTER DISPLAY CODE (TI) OR ?:rn

E1 THROUGH E10 ASSIGNED

=> s e1-e10

1066 13408-78-1/BI

25 143032-85-3/BI

28 156316-85-7/BI

18 157893-62-4/BI

247 36465-90-4/BI

156 54573-75-0/BI

86803 7440-42-8/BI

352074 7440-70-2/BI

22224 7681-49-4/BI

6683 9007-12-9/BI

L2 455369 (13408-78-1/BI OR 143032-85-3/BI OR 156316-85-7/BI OR 157893-62-4/BI OR 36465-90-4/BI OR 54573-75-0/BI OR 7440-42-8/BI OR 7440-70-2/BI OR 7681-49-4/BI OR 9007-12-9/BI)

=> d ibib 1-8

L12 ANSWER 1 OF 8 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1991:678635 CAPLUS
DOCUMENT NUMBER: 115:278635
TITLE: Effects of vitamin D2 analogs on calcium metabolism in
vitamin D-deficient rats and in MC3T3-E1 osteoblastic
cells
AUTHOR(S): Sato, F.; Ouchi, Y.; Okamoto, Y.; Kaneki, M.;
Nakamura, T.; Ikekawa, N.; Orimo, H.
CORPORATE SOURCE: Fac. Med., Univ. Tokyo, Tokyo, 113, Japan
SOURCE: Research in Experimental Medicine (1991), 191(4),
235-42
CODEN: REXMAS; ISSN: 0300-9130
DOCUMENT TYPE: Journal
LANGUAGE: English

L12 ANSWER 2 OF 8 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1986:527473 CAPLUS
DOCUMENT NUMBER: 105:127473
TITLE: Treating metabolic bone disease in mammals
INVENTOR(S): DeLuca, Hector F.; Schnoes, Heinrich K.
PATENT ASSIGNEE(S): Wisconsin Alumni Research Foundation, USA
SOURCE: U.S., 9 pp. Cont.-in-part of U.S. Ser. No. 607,327,
abandoned.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4588716	A	19860513	US 1985-691824	19850116
PRIORITY APPLN. INFO.:			US 1984-607327	A2 19840504

L12 ANSWER 3 OF 8 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1985:606855 CAPLUS
DOCUMENT NUMBER: 103:206855
TITLE: The effect of 1 α -hydroxyvitamin D2 on calcium
metabolism in glucocorticoid-treated rats
AUTHOR(S): Sjoeden, G. O. J.; Lindgren, J. U.; Deluca, H. F.
CORPORATE SOURCE: Huddinge Univ. Hosp., Karolinska Inst., Huddinge,
S-141 86, Swed.
SOURCE: Bone (New York, NY, United States) (1985), 6(4), 231-4
CODEN: BONEDL; ISSN: 8756-3282
DOCUMENT TYPE: Journal
LANGUAGE: English

L12 ANSWER 4 OF 8 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1985:147935 CAPLUS
DOCUMENT NUMBER: 102:147935
TITLE: 1 α -Hydroxyvitamin D2 is less toxic than
1 α -hydroxyvitamin D3 in the rat
AUTHOR(S): Sjoeden, Goeran; Smith, Connie; Lindgren, Urban;
DeLuca, Hector F.
CORPORATE SOURCE: Coll. Agric. Life Sci., Univ. Wisconsin, Madison, WI,
53706, USA
SOURCE: Proceedings of the Society for Experimental Biology
and Medicine (1985), 178(3), 432-6
CODEN: PSEBAA; ISSN: 0037-9727
DOCUMENT TYPE: Journal

LANGUAGE: English

L12 ANSWER 5 OF 8 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1984:523324 CAPLUS
DOCUMENT NUMBER: 101:123324
TITLE: Effects of 1α OHD2 on bone tissue. Studies of
 1α OHD2 and 1α OHD3 in normal rats and in
rats treated with prednisolone
AUTHOR(S): Sjoeden, G. O. J.; Johnell, O.; DeLuca, H. F.;
Lindgren, J. U.
CORPORATE SOURCE: Karolinska Inst., Huddinge Hosp., Huddinge, S-141 86,
Swed.
SOURCE: Acta Endocrinologica (1984), 106(4), 564-8
CODEN: ACENA7; ISSN: 0001-5598
DOCUMENT TYPE: Journal
LANGUAGE: English

L12 ANSWER 6 OF 8 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1981:373 CAPLUS
DOCUMENT NUMBER: 94:373
TITLE: Treating calcium imbalance and improving calcium
absorption in mammals
INVENTOR(S): DeLuca, Hector F.
PATENT ASSIGNEE(S): Wisconsin Alumni Research Foundation, USA
SOURCE: U.S., 3 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4225596	A	19800930	US 1978-951320	19781013
PRIORITY APPLN. INFO.:			US 1978-951320	A 19781013

L12 ANSWER 7 OF 8 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1978:103619 CAPLUS
DOCUMENT NUMBER: 88:103619
TITLE: Biological activity of 1α -hydroxyvitamin D2 in
the rat
AUTHOR(S): Reeve, L. E.; Schnoes, H. K.; DeLuca, H. F.
CORPORATE SOURCE: Coll. Agric. Life Sci., Univ. Wisconsin, Madison, WI,
USA
SOURCE: Archives of Biochemistry and Biophysics (1978),
186(1), 164-7
CODEN: ABBIA4; ISSN: 0003-9861
DOCUMENT TYPE: Journal
LANGUAGE: English

L12 ANSWER 8 OF 8 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1975:132956 CAPLUS
DOCUMENT NUMBER: 82:132956
TITLE: 1α -Hydroxy vitamin D2. Potent synthetic analog
of vitamin D2
AUTHOR(S): Lam, H. Y.; Schnoes, H. K.; DeLuca, H.
CORPORATE SOURCE: Coll. Agric. Life Sci., Univ. Wisconsin, Madison, WI,
USA
SOURCE: Science (Washington, DC, United States) (1974),
186(4168), 1038-40
CODEN: SCIEAS; ISSN: 0036-8075
DOCUMENT TYPE: Journal

LANGUAGE:

English

ACCESSION NUMBER: 1975:132956 CAPLUS

DOCUMENT NUMBER: 82:132956

TITLE: 1 α -Hydroxy vitamin D2. Potent synthetic analog
of vitamin D2

AUTHOR(S): Lam, H. Y.; Schnoes, H. K.; DeLuca, H.

CORPORATE SOURCE: Coll. Agric. Life Sci., Univ. Wisconsin, Madison, WI,
USA

SOURCE: Science (Washington, DC, United States) (1974),
186(4168), 1038-40

CODEN: SCIEAS; ISSN: 0036-8075

DOCUMENT TYPE: Journal

LANGUAGE: English

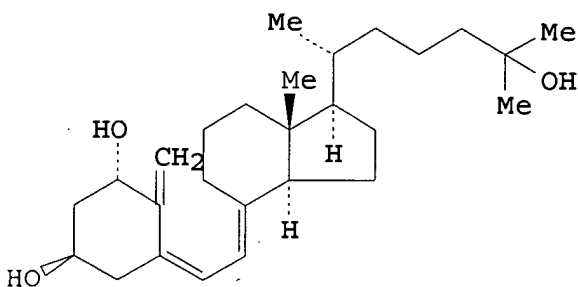
GI For diagram(s), see printed CA Issue.

AB A hydroxy analog of vitamin D2, 1 α -hydroxyvitamin D2 (I) [54573-75-0] was synthesized and was active in stimulating intestinal calcium [7440-70-2] transport and bone Ca mobilization in the rat and exhibited antirachitic activity. Its biopotency was comparable to that of the corresponding vitamin D3 analog, 1 α -hydroxyvitamin D [41294-56-8].

ACCESSION NUMBER: 1981:373 CAPLUS
 DOCUMENT NUMBER: 94:373
 TITLE: Treating calcium imbalance and improving calcium absorption in mammals
 INVENTOR(S): DeLuca, Hector F.
 PATENT ASSIGNEE(S): Wisconsin Alumni Research Foundation, USA
 SOURCE: U.S., 3 pp.
 CODEN: USXXAM
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4225596	A	19800930	US 1978-951320	19781013
PRIORITY APPLN. INFO.:			US 1978-951320	A 19781013

GI



I

AB In postmenopausal women receiving 1,25-dihydroxycholecalciferol (I) [32222-06-3] (0.5 $\mu\text{g/day}$), Ca absorption and Ca balance (Ca intake minus urinary and fecal Ca output) were dramatically improved. Other compds. within the scope of the claims are 1 α -hydroxycholecalciferol [41294-56-8], 1 α -hydroxyergocalciferol [54573-75-0], 1,25-dihydroxyergocalciferol [55248-15-2], 1,24,25-trihydroxycholecalciferol [50648-94-7], and 1,24-dihydroxycholecalciferol [60965-80-2]. Thus, the cholecalciferol derivs. may be useful for treating metabolic bone disease characterized by loss of bone mass and improving the Ca balance and absorption in mammals, particularly postmenopausal women.